

## WHAT IS CLAIMED IS

1. A method of regulating the operating temperature of an internal combustion engine, in which

    a cooling fluid is circulated through the internal combustion engine by means of a pump driven by an electric motor,

    the fluid temperature is measured,

    the electric pump motor is controlled in dependence on the fluid temperature, and

    at a fluid temperature below the normal engine operating temperature waste heat produced by the electric pump motor is transferred to the cooling fluid.

2. A method as set forth in claim 1

    wherein the electric pump motor is operated with a power dissipation loss which is increased in comparison with its nominal operation.

3. A method as set forth in claim 1

    wherein during heating of the cooling fluid to the engine operating temperature the electric pump motor is operated temporarily at least at the saturation limit.

4. A method as set forth in claim 3

    wherein during heating of the cooling fluid to the engine operating temperature the electric pump motor is operated in pulse form.

5. A method as set forth in claim 3

    wherein the electric pump motor is operated above the saturation limit.

6. A method as set forth in claim 1

    wherein upon heating of the cooling fluid to the engine operating temperature the motor windings are fed with an alternate forward and

reverse exciter current flow, a low level of mechanical power being delivered by the motor for transporting the cooling fluid.

7. A method as set forth in claim 1

wherein the waste heat produced by the motor windings is transferred to the cooling fluid as it is passed in the proximity of the motor windings.

8. A method as set forth in claim 1

wherein the electric motor is supplied with a cyclically controlled current.

9. Apparatus for regulating the operating temperature of an internal combustion engine comprising

a cooling fluid circuit for circulating cooling fluid through the internal combustion engine,

a cooling fluid pump for transporting the cooling fluid in the cooling fluid circuit,

an electric motor for driving the cooling fluid pump with at least one part of the electric motor which produces waste heat arranged in heat-exchange relationship with the cooling fluid circuit, and

a control device for controlling the electric motor in dependence on the temperature of the cooling fluid.

10. Apparatus as set forth in claim 9

wherein said part of the electric motor which produces waste heat is arranged in the cooling fluid circuit.

11. Apparatus as set forth in claim 9 including

further electrical devices which in operation give off waste heat arranged in the cooling fluid circuit in heat-transmitting contact with the cooling fluid.

12. Apparatus as set forth in claim 9

wherein the control device has semiconductor switches for cyclically controlled current supply to the electric motor, the operating current for the semiconductor switches having slowly rising edges.

13. Apparatus as set forth in claim 11

wherein the current pulses have ripples.

14. Apparatus as set forth in claim 9

wherein the electric pump motor and the cooling fluid pump form a structural unit through which in operation cooling fluid flows.